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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ian Dawes

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EXAMINER

SINGH, DALZID E

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/035,494	Applicant(s) DAWES ET AL.	
	Examiner Dalzid Singh	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/8/01;3/11/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the structural elements of figure 2 (40, 44 and 62) are merely labeled with identifying numbers. Applicant must supply a suitable legend. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application (see 37 CFR 1.84(n) and 1.84(o)). The following are quotation of 37 CFR 1.84(n) and 1.84(o):

(n) *Symbols*. Graphical drawing symbols may be used for conventional elements when appropriate. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. Known devices should be illustrated by symbols which have a universally recognized conventional meaning and are generally accepted in the art. **Other symbols which are not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable.**

(o) *Legends*. Suitable descriptive legends may be used subject to approval by the Office, or may be required by the examiner where necessary for understanding of the drawing. They should contain as few words as possible.

The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4, 9, 13 and 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the plurality of intermediate optical signals" in line

5. There is insufficient antecedent basis for this limitation in the claim.

4. Claims 4, 13 and 17 recite "the optical management signal is transmitted at a wavelength that is not suitable for transmitting intermediate optical signals having an optical reach greater than 1000 km" It is unclear what is meant by such limitation. It is well known that with the use of optical regenerators and/or amplifier optical signal can be transmitted to reach long distances. Therefore, based on this, the claims as written is indefinite for failing to particularly point out and distinctly claim the subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 9-11, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishimatsu et al (US Patent No. 6,018,406).

Regarding claim 1, Ishimatsu et al disclose optical transmission system, as shown in Fig. 2, comprising:

an optical transport line (500-1) terminating at the network element (100), the optical transport line operable to carry an optical system signal therein;

a demultiplexing component (130-1) connected to the optical transport line (500-1), the demultiplexing component operable to receive the optical system signal and separate the optical system signal into a plurality of intermediate optical signals (such as λ_1' and λ_q'); and

a plurality of optical fibers connected to the demultiplexing component (it is inherent that there exist plurality of optical fiber connected to the demultiplexing component to carry the plurality of the optical signal), each of the optical fibers operable to carry one of the plurality of intermediate optical signals (λ_1' and λ_q') and an optical management signal (λ_{sv}) therein, the optical management signal being transmitted at a wavelength different than the wavelength range used to transmit the intermediate optical signal (in col. 2, lines 63-67 to col. 3, lines 1-12, Ishimatsu et al disclose that wavelength of the optical signal are mutually different).

Regarding claims 2 and 10, as discussed above, Ishimatsu et al disclose that the optical management signal (λ_{sv}) is transmitted at a wavelength that is spectrally separated from the transmission wavelength range for the plurality of intermediate optical signals (λ_1' and λ_q').

Regarding claim 9 (as far as understood), Ishimatsu et al disclose optical transmission system, as shown in Fig. 2, comprising:

terminating an optical transport line at a network element (100) residing in the optical transport network, the optical transport line operable to carry an optical system signal and the optical system signal having a plurality of optical data signals (λ_1' and λ_q') embodied therein;

routing the plurality of optical signals (λ_1' and λ_q') amongst a plurality of optical fibers associated with the network element (it is inherent that there exist plurality of optical fiber to carry the plurality of the optical signal); and

defining an optical management channel for each of the plurality of optical fibers, the optical management channel operable to carry an optical management signal therein (the optical management channel (λ_{sv}) is carried on the optical fiber).

Regarding claims 11 and 15, as discussed above, Ishimatsu et al disclose that a first optical management signal further comprises selecting a wavelength that is spectrally separated from the wavelength range used to transmit the optical data signal (since the optical signal have mutually different wavelength therefore the wavelength are spectrally separated).

Regarding claim 14, Ishimatsu et al disclose optical transmission system, as shown in Fig. 2, comprising:

a plurality of optical transport lines (500-1 to 500-m) interconnecting the plurality of network elements (130-1 to 130-m), each optical transport line operable to carry an optical system signal and the optical system signal having a plurality of optical data signals (λ_1' and λ_q') embodied therein; and

a plurality of optical fibers (it is inherent that there exist plurality of optical fiber to carry the plurality of the optical signal) associated with each network element, each of the optical fibers operable to carry one or more optical data signals (λ_1' and λ_q') and an optical management signal (λ_{sv}) therein, the optical management signal being transmitted at a wavelength different than the wavelength range used to transmit the optical data signals through the corresponding optical fiber.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 5, 13, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimatsu et al (US Patent No. 6,018,406).

Regarding claims 4, 13 and 17 (as far as understood), as discussed above, Ishimatsu et al disclose the transmission of management signal (λ_{sv}) and differ from the claimed invention in that Ishimatsu et al do not specifically disclose that the optical management signal is transmitted at a wavelength that is not suitable for transmitting intermediate optical signals having an optical reach greater than 1000 km. However, as shown in Fig. 3, Ishimatsu et al shows plurality of optical repeater equipments located along the transmission path. Since plurality of optical repeater regenerate the optical signal, therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide the optical management signal at such wavelength so that it does not travel greater than 1000km. One of ordinary skill in the art would have been motivated to do such in order to eliminate the need of having optical amplifier along the transmission path.

Regarding claims 5 and 18, as discussed above, since the optical signal which comprised of intermediate optical signal (λ_1' and λ_q') and management signal (λ_{sv}) are transmitted in a multiplexed fashion and are independent of the other, therefore, it would

have been obvious to an artisan of ordinary skill in the art to transmit the optical management signal in the absence of the intermediate optical signal. Since the optical management signal contains status and condition of nodes or transmission lines, therefore one of ordinary skill in the art would have been motivated to transmit optical management signal in the absence of the other optical signal in order to indicate alarm if faults occur.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimatsu et al (US Patent No. 6,018,406) in view of Huber et al (US Patent No. 6,661,973).

Regarding claim 6, as shown in Fig. 2, Ishimatsu et al show a plurality of management signal sources (sources that generate (λ_{sv})) and differ from the claimed invention in that Ishimatsu et al do not disclose that the plurality of management signal sources (sources that generate (λ_{sv})) are interposed between the demultiplexing component and the plurality of optical fibers, where each of the management signal sources is operable to introduce an optical management signal into a corresponding optical fiber. However, such arrangement is well known. Huber et al is cited to show such well known concept. In Fig. 1, Huber et al show plurality of local signal generators (OSC) (16) interposed between demultiplexing component (20) and the plurality of optical fibers (the plurality of optical fibers are coupled to each optical source). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide such arrangement as taught by Huber et al to the

transmission system of Ishimatsu et al. One of ordinary skill in the art would have been motivated to do such in order to associate information on each optical fiber.

Regarding claim 7, in view of the rejection of claim 6, as shown in Fig. 1, Huber et al further show laser to generate the optical signal and a signal combiner to combine the generated signal with other optical signal (intermediate optical signal) from the demultiplexer (see col. 5, lines 19-35 of Huber et al).

Regarding claim 8, in view of the rejection of claim 6, as shown in Fig. 1, Huber et al further show receiver ($14_1 - 14_n$) to receive and separate the optical signal (locally generated) and the intermediate optical signal from the demultiplexer (see col. 5, lines 19-35 of Huber et al).

10. Claims 3, 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimatsu et al (US Patent No. 6,018,406) in view of Barry et al (US Patent No. 6,433,903).

Regarding claims 3, 12 and 16 as discussed above, Ishimatsu et al disclose that the intermediate optical signal (λ_1' and λ_q') and management signal (λ_{sv}) have mutually different wavelength and differ from the claimed invention in that Ishimatsu et al do not specifically disclose that the plurality of intermediate optical signals are transmitted at a wavelength in the range of 1520 nm to 1610 nm and each of the optical management signals are transmitted at substantially 1310 nm. However, it is well known to transmit to transmit optical signal and management signal (supervisory signal) at such wavelength range. Barry et al is cited to show such well known concept. In col. 4, lines

60-63, Barry et al disclose the use of wavelength in such range. Therefore, it would have been a matter of design choice to an artisan of ordinary skill in the art at the time the invention was made to provide the optical signal and management signal (supervisory signal) with such wavelength range. One of ordinary skill in the art would have been motivated to do such in order to reduce crosstalk between the management signal and the optical data signal.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okamoto et al (US Patent No. 6,094,442) is cited to show optical path termination equipment.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272--3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2633

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
March 12, 2005


M. R. SEDIGHIAN
PRIMARY EXAMINER